

UNIVERSITIES

- HVAC ventilation fans
- HVAC air handlers
- HVAC pumps



University of Nebraska-Lincoln

Why are our motors failing?

The University of Nebraska-Lincoln was experiencing many motor failures on their HVACR equipment. A study by the Facilities Planning and Construction team led to the fact that most of these failures were due to motor bearing damage caused by induced shaft voltages from the use of drives. They soon realized that they could reduce the expensive downtime by using a shaft grounding device to protect the motor bearings. Initially, they started using the fiber ring shaft grounding option. However, they soon learned that they were continuing to have bearing failures. They then searched for a more reliable bearing protection option.

Testing the options

The Facilities Planning and Construction team needed to find a reliable and cost effective option for bearing protection.



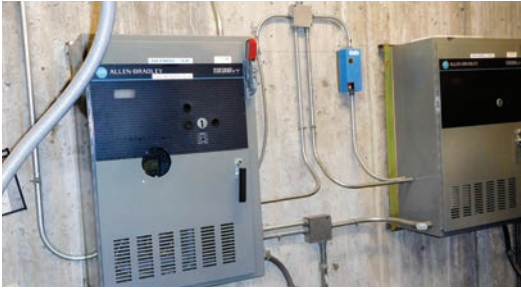
The university conducted research and tested several options, including a silver brush contacting the motor shaft. Helwig Carbon Products has developed and refined this technology. It features a specially engineered silver graphite brush that is installed in contact with the motor shaft and connected to ground. This provides for a path of least resistance for the induced currents to get to ground without discharging through the motor bearings.



Hot Water Recirculating Pump



BPK-4 on Pump Motor



Recirculation Pump Control Panel & VFD



BPK-4 on Air Handling Unit Fan Motor

The Helwig Carbon Products Bearing Protection Kits (BPK) performed exceptionally well and virtually eliminated the high percentage of motor failure rates.

Solution: Retrofit with BPK-4 kits

After testing confirmed the performance and reliability of Helwig Carbon Products Bearing Protection Kit (BPK), the university started to retrofit all HVACR equipment on campus with BPK-4 kits. They also wrote and added a specification to all HVACR projects requiring Helwig Carbon Products BPK to be installed on all new motors installed at the University of Nebraska-Lincoln.

This shaft grounding solution proved successful and economical. Now the reliability of the HVACR equipment is assured.

Other Universities Using Helwig's Bearing Protection Kit

University of Pittsburgh

University of Syracuse

Arizona State University

Brigham Young University

Colorado State University

Northern Colorado University

Penn State University

University of Illinois

University of California—San Francisco



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